

Wastelines

2002 Governor's Award for Pollution Prevention

The 2002 Governor's Award for Pollution Prevention was presented at the Tenth Annual New Hampshire Pollution Prevention Conference on April 1 at the New England Center in Durham. The award recognizes businesses, organizations, and new technologies that have successfully reduced or eliminated wastes at their source. This year, the award was presented to two winners and four companies received honorable mentions.

Erie Scientific Company

Erie Scientific Company, a subsidiary of Apogent Technologies in Portsmouth, is one of two businesses that won the 2002 Governor's Award for Pollution Prevention. Erie Scientific manufactures microscopic slides, cover glass slips, DNA plates, and a variety of medical equipment, including waterless hand cleaners. Erie is being recognized for a pollution prevention program that includes:



Left to Right: Governor Shaheen, Gunner Kenison, Erie Maintenance Manager, Joel Sadler, Erie Scientific Environmental Health and Safety Specialist, Sara Johnson, DES Pollution Prevention Manager.

- Initiating a water-recycling project that reduced water use by 55 percent. The water-recycling project saves 46,000 gallons per day, or over 17 million gallons per year and saves the company \$80,000 per year in water costs.
- Reducing mercury sources in the facility by replacing mercury-containing thermometers from the laboratories and research rooms with alcohol based or digital thermometers. In 2001, 25 pounds of mercury thermometers were sent for recycling and Erie also recycles low mercury "green tip" fluorescent bulbs. This effort eliminates the risk of mercury spills.
- Initiating a "Slides for Schools Program" in which unused, good quality microscope slides are sent to schools in the state and the Donation Depot at New Hampshire College. To date, 400 pounds of microscope slides have been donated rather than recycled.
- Purchasing two electric trucks for use between Erie's three buildings in Portsmouth, thereby reducing air emissions.

Erie Scientific currently recycles 56 percent of their production waste. Through their recycling program, they estimate that 100 tons of glass, paper, wood, scrap metal and thermoforming plastic is kept out of landfills each year. Erie plans to recycle all cardboard within the next two years.

Rockwell Automation



Left to Right: Governor Shaheen,
with Pamela Bealo, Rockwell
Automation Environmental and
Safety Coordinator.

Rockwell Automation of Manchester assembles sensing devices and performs other on-site processes that include surface mount electronic assembly, injection molding, and associated tool and die making. Rockwell has focused its efforts to identify means of minimizing their demand on natural resources such as electricity and natural gas and they have been ISO 14001 certified since 1999. Rockwell has been successful with the following pollution prevention projects.

- Initiating a waste stream reduction program. In 1997, eight solid waste streams were being recycled and by 2001, that number increased to 21. Currently, over 200,000 pounds of Rockwell's solid waste are recycled per year.
- Conducting a "dumpster dive" to determine their largest solid waste stream, which was wooden spools. After implementing a spool-recycling program, 17 percent of Rockwell's total solid waste has been reduced, which saves the company \$3,500 a year on disposal costs.
- Implementing an energy conservation program by re-lamping the facility with a more energy efficient lighting system, establishing a "lights off" policy, and painting the facility

walls white to help reflect light. Rockwell also upgraded their air conditioning units to High SEER (seasonal energy efficiency rating) and installed a variable frequency drive on the air compressor. Natural gas usage was reduced through work on improving their roof insulation factor. Through these efforts, the energy conservation program has an annual savings cost of \$54,600 per year.

Congratulations to the following companies for receiving Honorable Mention in this year's Governor's Award for Pollution Prevention!

Anheuser-Busch, Inc. Merrimack Brewery, a plant that brews, packages and ships malt beverages,

- Implemented a new energy-efficient heating, ventilating, and air conditioning (HVAC) system to replace an aged existing system. Estimated fuel, electricity and maintenance costs to be saved per year are \$465,000.

Batesville Manufacturing Company, a manufacturer of wood burial caskets in Nashua,

- Introduced a new line of non-solid wood caskets projected to reduce Volatile Organic Compound (VOC) emissions by 50 percent.
- Recycled hazardous waste, saving the company approximately \$1,700 per year. Spray guns were dedicated for each stain color, reducing hazardous waste.
- Reduced approximately 202 tons of non-hazardous waste from entering a landfill.
- Recycled heated air, saving approximately 25 percent (\$15,000) on heating costs.
- Installed a wood grinder to recycle sawdust for wood pellets and animal feed.

Green Mountain Rifle Company, Conway, a designer, engineer and manufacturer of gun barrels for their company and other companies/individuals,

- Implemented a reduce, reuse and recycle program that reduces not only the amount of waste but also the toxicity.
- Instituted an aggressive energy savings program and pay plan that takes "waste" and "savings" into account for each employee.
- Installed an air filtration system in the production area and offices to remove particulates and toxins from the air.

Millipore Corporation, a manufacturer of filtration devices in Jaffrey,

- Formed of an Energy Conservation Team in 2000 to evaluate energy conservation opportunities that could reduce operating costs for the facility. Projected energy reduction savings per year is \$52,133.

If you would like more information about the Governor's Award for Pollution Prevention, or you would like to share your facility's pollution prevention project in an upcoming issue of *Wastelines* or on the NHPPP homepage, please contact the NHPPP at (800) 273-9469 or e-mail nhppp@des.state.nh.us.

Technology Update

Water Conservation and Wastewater Recycling



Many of today's electronic industries (circuit board, plating, semi-conductor, electronic components) use large quantities of water throughout their production processes. Wastewater becomes contaminated with a variety of regulated contaminants and cannot be discharged without treatment. Redux Technology's presentation, "Water Conservation and Wastewater Recycling," at this year's New Hampshire Pollution Prevention Conference provided information on the costs and advantages of technologies associated with this topic.

Wastewater recycling has been slow to gain acceptance due to the difficulty in producing high quality process water from wastewater. However, with recently applied technologies, it is possible to recycle wastewater for a total cost of \$1 per thousand gallons. Minimum criteria for a wastewater recycling system should include the following.

1. The recycling system must produce water of a quality that meets or exceeds the user's specifications.
2. The system provided must have a capital payback within the user's financial guidelines, generally less than 30 months.
3. The system will reduce operating costs by a substantial amount well beyond the capital payback time, generally for eight to ten years after capital payback.
4. The system will not be operator or maintenance intensive, and will require a minimum of floor space.
5. The system should produce less waste for disposal and minimize chemical usage, in addition to recycling a high percentage of wastewater.
6. Technologies employed in the system should be proven and have a historical design basis.

Most wastewater recycling systems use ion exchange and/or reverse osmosis processes. Ion exchange (IX) has been used for water softening, de-ionization and removal of metal for waste treatment or recovery. The effectiveness of this technology is limited when high levels of total dissolved solids are present in the wastewater being treated. Therefore, pre-treatment of the wastewater for removal of solids is required, adding to the capital and operating costs of a particular operation. Reverse osmosis (RO) has historically been used for the desalinization of water. RO systems are sensitive to particulates as well as microbial fouling.

Since the majority of data from both IX and RO have come from the application of these technologies to produce pure water, few applications have been successfully applied to recycling wastewaters. Common design errors include poor characterization of the wastewater stream; use of "pure water" design methods on wastewater applications; inappropriate pretreatment; and inadequate pilot work. Therefore, it is important for potential wastewater recyclers to characterize their wastewater streams and have extensive pilot work to be successful at this technology.

To learn more about these technologies, please visit www.reduxtech.com. The information in this article is written based on a review of the paper "Water Conservation and Wastewater Recycling," and DES does not necessarily endorse any of the above technologies.

Two Pending House Bills of Interest

House Bill 1102, establishing a hazardous waste coordinator certificate program and making an appropriation therefor

This bill would require certification of at least one employee at each facility that is a large or full quantity hazardous waste generator. This bill would create the authority and means to train large businesses in the complex regulatory area of hazardous waste, thereby providing greater protection to public health and the environment.

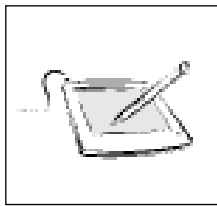


House Bill 1170, an act extending the environmental audit program

An environmental audit means the voluntary, objective, and comprehensive evaluation of one or more facilities, activities, or management systems. The audit would show evidence of noncompliance with environmental laws, and reveal the threat of imminent and substantial harm to the public health or environment. This bill would extend the environmental auditing program for another year.

For further information about current New Hampshire environmental legislation visit www.des.state.nh.us or www.gencourt.state.nh.us.

Environmental Report Card



The Department of Environmental Services (DES) historically reports its activities, such as the number of hazardous waste generator inspections completed, as an indicator of how good a job it is doing to protect New Hampshire's environment. The problem is there has never been an attempt to actually show that by performing those inspections, businesses are motivated to achieve greater levels of compliance than if no inspections were performed. In other words, do DES's inspections, conferences, enforcement actions, etc. (outputs) result in a change of behavior (outcomes) by the regulated community?

This summer, the Waste Management Division of DES will be conducting a "compliance indicator survey". The purpose of this survey is to demonstrate the cause and effect relationship between DES activities and the degree of compliance with NH Hazardous Waste Rules at New Hampshire businesses. To perform this survey, DES developed a set of ten straightforward "indicator questions" that will provide an indication of the "business' degree of compliance". Starting in June, DES will provide both in-house and field training to college interns who will canvas several hundred businesses throughout the summer. The interns will require 45 minutes to an hour of company time to complete and verify the ten questions. The survey will not result in any enforcement action, unless the intern uncovers an "imminent threat to health or environment."

If an intern asks permission to survey your business, we hope you will participate. The survey will benefit businesses, because the results will identify regulatory areas DES does not need to spend resources on, as well as areas where outreach and assistance can serve to improve compliance. This year's survey will provide a baseline of data, with the survey being repeated in several years to determine changes in compliance rates.

For further information on this survey, please contact John Duclos, Administrator of the Hazardous Waste Compliance Bureau, DES, at 271-2942.

Toxic Release Inventory (TRI) Program New Rule Lowering Threshold for Lead

The Toxic Release Inventory (TRI) is a U.S. Environmental Protection Agency (EPA) database that contains information of toxic chemical releases and other waste management activities across the country. Lead is a known persistent bioaccumulative toxin. The EPA recently implemented a new rule lowering the TRI reporting threshold for lead. Under this new requirement, facilities that manufacture, process, or otherwise use 100 pounds or more of lead or lead compounds will be required to file a TRI "Form R" to the EPA. However, if the lead or lead compounds are mixed in with other non-lead compounds material, only the weight of the lead or lead compounds in the material should count toward the 100-pound reporting threshold. The new requirements apply to TRI reports for the year 2001, which must be submitted to EPA by July 1, 2002.

The EPA website www.epa.gov/tri contains copies of the rule, other chemicals listed, and further information on TRI.

Reducing Our Ecological Footprint

On June 13, DES, Foundation for Healthy Communities, and HealthCare Without Harm will be presenting a full-day workshop for hospitals entitled "Reducing Our Ecological Footprint." The purpose of the program will be to help attendees understand the relationships between health, the environment, and the products used in healthcare. The program will show the lifecycle hazards of some common medical products and present opportunities to reduce healthcare's ecological footprint through improved purchasing and disposal choices.

Interested parties who would benefit from this workshop include hospital environmental service directors, facilities managers, purchasing directors, hazardous waste coordinators, nursing staff, and infection control practitioners. Speakers at the conference include Mark Rossi, a Senior Research Associate with Health Care Without Harm; Richard Rumba, DES Air Toxics Program Manager; Ted Schettler, Science Director at Science and Environmental Health Network; Catherine Galligan, Clearinghouse Manager at Sustainable Hospitals Project; and Joel Siegler, Environmental Health and Safety at Kaiser Permanente. For more information, contact Sara Johnson, DES, at (603) 271-6460.

Environmental Management Systems

This article contains information from "Do You Have All The Elements?" published in SOURCE, Volume 17, Number 1, Winter 2002. Reprinted with permission from the Minnesota Technical Assistance Program.



An Environmental Management System (EMS) provides the structure for businesses that are interested in continually improving environmental, regulatory, and health and safety performance. Companies that implement EMSs realize a variety of benefits, including increased profits, improved efficiencies, better regulatory compliance and decreased liability costs. The Minnesota Technical Assistance Program (MnTap) published an excellent checklist for the ten elements an EMS should have in order to gain the maximum environmental and economic benefits.

1 Environmental Policy

- _Reflects how the organization feels about the environment
- _Identifies environmental impacts of processes and products
- _Ensures compliance with environmental requirements
- _Commits organization to prevent pollution, reduce environmental risks and shares information with external stakeholders

2 Environmental Requirements and Voluntary Initiatives

- _Employees understand their roles in meeting environmental requirements
- _Identify management and manufacturing practices that affect the organization's ability to meet requirements
- _Identify and work with programs that encourage preventing pollution

3 Objects/Targets

- _Set the following environmental objectives: comply with environmental requirements; continuous improvement in regulated and non-regulated areas; and prevent pollution.
- _Make objectives specific to the organization
- _Set time frames to meet objectives
- _Update objectives as environmental requirements evolve

4 Structure, Responsibility and Resources

- _Ensure the operation has the personnel needed to meet the objectives
- _Make managers responsible for the environmental performance of their unit
- _Develop procedures for attaining objectives

5 Operational Control

- _Establish a procedure to ensure waste management hierarchy is followed
- _Develop simple procedures to measure and report the environmental impacts of processes and products

6 Corrective and Preventive Action and Emergency Procedures

- _Document procedures for identifying, correcting and preventing mistakes
- _Develop emergency procedures to minimize or eliminate adverse environmental impacts associated with accidents or emergencies
- _Correct causes of potential hazards to prevent pollution

7 Training, Awareness and Competence

- _Train staff whose roles affect meeting objectives and ensure they are capable of carrying out required duties
- _Mandatory trainings which include detailed pollution prevention methods

8 Organizational Decision-making and Planning

- _Use life-cycle analysis to identify the impact products make on the environment
- _Empower all employees to make pollution improvements that do not require significant resources.

9 Document Control

- _For future evaluations, document steps taken to meet objectives
- _Use electronic documentation to improve record management
- _Document all pollution prevention suggestions

10 Continuous Evaluation and Improvement

- _Conduct and document periodic objective based on audits of the organization's performance
- _Use audits to assess pollution efforts

If your company would like a free, confidential assistance in starting an EMS, contact Bob Minicucci, DES, at (603) 271-2941 or e-mail rminicucci@des.state.nh.us.



New Hampshire Department of Environmental Services
6 Hazen Drive
Concord, New Hampshire 03301

Return Service Requested

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Calendar of Events

May 7 - 9
EnviroExpo2002
Boston, MA

617-489-3400 www.EnviroExpo.com

May 21
Pollution Prevention

An Advanced Safety and Health Certificate Program
Core Course
Safety and Health Council of N.H.
Concord, NH 603-228-1401 www.shcnh.org

June 13
Dioxin Workshop

DES/NHHA/Health Care without Harm
Concord, NH
603-225-0900 www.healthynh.com

June 27-28
Northeast Resource Recovery Association Conference
Manchester, NH
603-798-5777 www.recyclewithus.org

September 16 -22
Pollution Prevention Week

New Staff at NH DES Pollution Prevention Program

Colleen Schwalbe is the new Pollution Prevention Specialist in the DES P2 Program. Along with current program activities, she will be managing the NHPPP web page, *Wastelines* newsletter, and working on the "Toxics in Schools" project. Prior to her employment with DES, Colleen worked at environmental consulting firms and the N.H. Division of Public Health Services, Bureau of Health Risk Assessment. She received a B.S. in toxicology from Northeastern University.

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The New Hampshire Pollution Prevention Program (NHPPP) is a free, confidential, non-regulatory technical and compliance assistance program for New Hampshire businesses and others. The NHPPP maintains an information clearinghouse, conducts on-site pollution prevention opportunity assessments, provides pollution prevention planning assistance, and organizes conferences and workshops.



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